

**CLAIMS -- I Claim:**

1. A method for monitoring and controlling, from a host computer, the real-time logic state of a plurality of target devices in a boundary scan chain, comprising:
  - (a) displaying graphical representations of said target devices on a graphical display device connected to said host computer,
  - (b) running boundary scan operations on said target devices to collect information about said target devices and storing said information in said host computer for said displaying operation,
  - (c) updating said graphical representations with said information to visually indicate current logic state of said target devices,whereby a human can view and manipulate a boundary scan enabled device via an easy-to-use intuitive graphical user interface.
2. The method of claim 1 further comprising modifying the attributes of said graphical representations to help organize and simplify monitoring of said boundary scan chain.
3. The method of claim 1 further comprising initiating and running boundary scan operations via a single button that frees the user from preparing predetermined test vectors.
4. The method of claim 1 further comprising initiating and running boundary scan operations via a single button press that frees the user from preparing predetermined test executives.
5. The method of claim 1 further comprising periodically updating graphical representations for displaying real time status of boundary scan information.
6. The method of claim 1, further comprising providing a plurality of virtual indicators to augment and simplify the display of boundary scan information.

7. The method of claim 6 wherein said indicators are graphical representations of various forms of light emitting diodes.
8. The method of claim 1, further comprising providing a plurality of virtual controls to augment and simplify the control of a boundary scan chain.
9. The method of claim 8 wherein said indicators appear as graphical representations of various forms of mechanical switches that are familiar to the user.
10. The method of claim 1, further comprising providing a graphical representation of an input-output port on said host computer used to perform boundary scan operations, whereby said input-output port graphical representation serves to visually remind the user which port is controlling the scan chain.
11. A method for determining a sequence of state machine transitions required to transition from any state in a boundary scan TAP controller to any other state in said boundary scan TAP controller given only a current state and a desired state, comprising:
  - (a) Using said current state and said desired state as indices into a predefined lookup table to identify said sequence of state machine transitions
  - (b) Applying said state machine transitions to said TAP controller to transition it to said desired state.
12. A method for creating graphical representations of target devices from user-provided boundary scan description files, comprising the steps of:
  - (a) opening a boundary scan description language file pointed to by a user;
  - (b) extracting a plurality of physical attributes of a target device from said file,

- (c) creating a graphical representation based on said plurality of physical attributes found in said file, and
- (d) displaying a plurality of said graphical representations on a host computer display.